

IOWA STATE UNIVERSITY
College of Agriculture and Life Sciences

STORIES

IN AGRICULTURE AND LIFE SCIENCES VOL.8 NO.2 2014

DIFFERENCE MAKERS

10 Conquering cancer,
remembering a friend

28 Cultural connections in
Costa Rica

32 Enriching lives through
education, agriculture

STORIES

IN AGRICULTURE AND LIFE SCIENCES

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College of Agriculture and Life Sciences



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FOREWORD

I SHOULD PROBABLY GET A NEW PAIR OF BOOTS.

Mine are over 30 years old. They belonged to my sister who died when I was four. She was fourteen when she last wore them. I grew to have the exact same sized feet. The brown suede is worn and stained in a few places.

When I wear them I am so much more aware that every day is a gift and a chance to make a difference – in my own small way – on this earth.

There are a lot of difference makers in this issue. Students, alumni and professors making progress in large and small ways on enormous problems plaguing society like Maura McGrail's work to understand cancer cells, the lasting impact of student mentors like John Burnett and Jodi Sterle and the meaningful work of the Center for Sustainable Rural Livelihoods with Ugandans to improve education and nutrition.

Tia Sandoval's service in the Peace Corps has undoubtedly changed the outlook for a generation of village children in Nepal. And, I got to see the difference our alumni in Costa Rica are making in person when I traveled there to accompany a study abroad trip hosted by Enrique Villalobos and an alumni event hosted by Adriana Murillo-Williams. Their gracious welcome, sincere care for our students and love of Iowa State still warms my heart.

What a difference they are all making. I'd love to hear from you as to how you and other alumni continue to make a difference in your communities and around the world. Please share your updates with stories@iastate.edu or use #CALSDifference in social media posts. I'll share responses in our monthly STORIES Online e-mail newsletter or via the college's Twitter and Facebook feeds.

I do own other boots, but none fit as perfectly as my sister's. I especially like to wear them on assignment for the magazine, or on a visit to the ISU farms. I think I'll keep them a while longer. Every step is important when you're out to make a difference.

Kind regards,

Melea Reicks Licht



STORIES MAGAZINE TOPS IN NATION



STORIES in Agriculture and Life Sciences received first place honors from the National Agricultural Alumni and Development Association for a magazine produced by a college. STORIES also was honored by the Association for Communications Excellence in Agriculture, Natural Resources, and Life and Human Sciences with the silver award for graphic design. Launched in 2007, STORIES magazine is delivered worldwide each fall to agriculture and life sciences alumni and friends. The spring issue is mailed to Midwest alumni. Each issue is available online at www.stories.cals.iastate.edu and via the STORIES app for iPad.



Central Campus is a frequent venue for student service and philanthropy activities. These students are raising money for children in Uganda during Melon Mania on central campus. Read more on page 14.

Photo: Contributed



ON THE COVER:

Lisa Wasko DeVetter ('07 biology, horticulture, '10 MS horticulture, soil science) mentored students in Uganda with the Center for Sustainable Rural Livelihoods in 2007. She returned in later years to help with the program and complete research. She is an assistant professor at Washington State University. Learn more about the center's work on page 16.

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This fall you don't need to look far to see difference makers among our students, faculty and staff for our community, state and planet.

Students in the Sustainable Agriculture Student Organization have been growing and cooking fresh garden produce for a program that provides free meals to hundreds of the needy in the Ames area.

The Block and Bridle Club organized nearly 400 volunteers who packaged more than 60,000 meals for Meals from the Heartland for delivery to hungry people in Iowa and around the world.

Two dozen plant pathology and microbiology students are screening soil samples for potentially new antibiotic or antimicrobial agents, part of the Small World Initiative, a worldwide crowd-sourcing effort by university science students. Maybe one will make a discovery that counters antibiotic resistance and benefits millions, while each finds real-life meaning from their class and lab studies.

The health of an ecosystem depends on strong, interactive relationships. That's why every fall I'm proud how ISU steps up to contribute to United Way, which works to meet the needs of preschool and grade school children, seniors, the disabled and others in our community. Faculty, staff and students do so not just financially, but also by working on Day of Caring community service projects. United Way is one way ISU shows how we care about the current and future health of our "ecosystem" — the people of our community.

Sometimes you can learn a lot about how much our students care by reading the quotes they put in their email signatures. Here's one I received recently in a note from a global resource systems student studying environmental science, who was preparing to travel to Vietnam to present on her research (how native plants can soak up contaminants from wastewater) at an international conference:

"A society grows great when old men plant trees whose shade they know they shall never sit in."

That mindset is what makes me hopeful for the future, and I hope it does for you, too.

Wendy Wintersteen
Endowed Dean of Agriculture and Life Sciences

STORIES EXTRA: www.stories.cals.iastate.edu



STUDENTS WORK FARM TO FORK
Members of the Sustainable Agriculture Student Association have spent the past two summers growing and cooking food for people in need in Ames. Meet them and see how they are meeting their mission of feeding people nutritious food in a sustainable way in a video online.

GLOBAL PERSPECTIVES

This year, the college will offer study abroad programs on all **7 CONTINENTS**. Last year, more than 400 students participated in study abroad programs and internships.

ALMANAC

FIFTH IN THE WORLD



Iowa State University ranks 5th in the world's best agricultural colleges, based on academic and employer reputation and on research citations.

RELEVANT RESEARCH

CALS leads campus in sponsored funding bringing in more than **60 MILLION DOLLARS** last year to fund high-impact, mission-oriented research from basic to applied.

The college brought in nearly **250 MILLION DOLLARS** in outside research dollars over the past five years.

MAJORS THAT MATTER

CALS offers **27 UNDERGRADUATE MAJORS** to prepare students to be leaders in addressing society's challenges in food, environment, energy, climate, nutrition and science and technology.

PROFESSIONALS LEARN FROM IOWA STATE

MORE THAN... 300,000

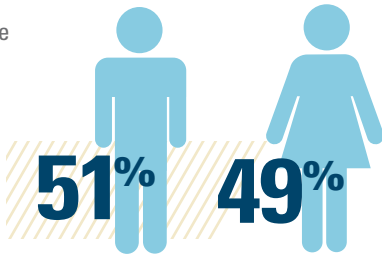
farmers and agribusiness professionals participated in ISU Extension and Outreach learning opportunities last year – that's enough people to fill Jack Trice Stadium more than 5 times.

ENROLLMENT REFLECTS OPPORTUNITIES

College of Agriculture and Life Sciences has broken enrollment records the past three years, and has seen a **75 PERCENT** increase in undergraduates since 2005.

Among the nation's ag colleges, ISU has the **3rd HIGHEST** undergraduate enrollment.

4,475 UNDERGRADUATES.
(730 graduate students)



OUR GRADS GET JOBS



The College of Agriculture & Life Sciences has a

98%

placement rate for recent graduates.

SCHOLARSHIPS

The College of Agriculture and Life Sciences and its departments offer over

\$2 million

in scholarships each year.

Students in the Lessons from Leopold Learning Community, gather with their instructors, Lisa Schulte Moore and John Burnett, in front of Aldo Leopold's famous Wisconsin "shack." Leopold and his family made the dilapidated chicken coop into a cabin where they stayed as they restored the land around the shack to prairie and woods, planting 40,000 trees.

CONNECTING STUDENTS WITH OPPORTUNITIES & THE OUTDOORS

By Lynn Laws

Front porches welcome and connect – indoors to outdoors, neighbor to neighbor, individuals to communities. They can be the place where futures are imagined and planned, and burdens made lighter by sharing.

That may be why Tom Isenhart, associate professor of natural resource ecology and management, says John Burnett is the “front porch of our department.”

“A front porch is the first place that you stop at a home. But it’s also the place where people are greeted, where they know they are welcome and where relationships are made. That truly is John,” says Isenhart.

Burnett leads recruiting, orientation and learning communities for the Department of Natural Resource Ecology and Management (NREM). He teaches three introductory courses, advises 350 undergraduate students, supervises peer mentors and student clerical staff and serves on several department and university committees. When students first consider natural resource majors Burnett is the first person they see.

“John makes an impact on you right away. At orientation he already knew everyone’s name. It really made me feel welcome,” says Carter Oliver, a senior in animal ecology and forestry from Woodbine, Iowa. “And the more years you spend with

him, the more connected you get and the more he understands you.”

Burnett listens to his students. He learns their interests and dreams and then shows them careers and professional development and community service opportunities matching their interests. He received the college’s 2014 Outstanding Adviser Award and is also the recipient of the 2014 Iowa State University Award for Academic Advising Impact.

“I really enjoy discussing possibilities with them. There are jobs and careers out there they don’t even know exist yet. Our job is to introduce them to those things so they can decide whether or not they want

to pursue them. When students get excited about that kind of thing, it's just wonderful to see," Burnett says.

Career opportunities for NREM students can include wildlife biologist, fisheries biologist, natural resources interpretation, conservation law enforcement, pre-veterinary and wildlife care. To give students a closer look at these professions and "to get them out there having fun and caring about the work," Burnett leads periodic weekend trips. These have included the Omaha Henry Doorly Zoo to get a behind-the-scenes tour by a zookeeper, the Neal Smith National Wildlife Refuge in Prairie City to observe the work of naturalists and a trip to Aldo Leopold's restored prairie and woods in Wisconsin to learn about land stewardship and the "father of wildlife management," Leopold himself.

Since joining the NREM staff in 1997, Burnett has helped Oliver and thousands of others explore careers and tailor their Iowa State experience to their professional and personal aspirations.

John Yates ('13 animal ecology) from Sioux City, Iowa, recalls numerous visits to Burnett's office and how Burnett helped him explore career interests as they developed.

"I led a study group for organic chemistry and realized I really enjoyed helping others learn," Yates says. "John suggested I look into supplemental instruction and later he introduced me to the Masters in Teaching (MAT) program in the College of Education. I know without him and his guidance, my entire path would have taken a much different route. I'm very happy with the way I've decided to go." Yates enrolled in the MAT program in May.

"Every time I had a question, all I had to do was pop my head in John's office and as long as he was not taking care of somebody else, he was always very welcoming. If I had a question about school, that was great. But if I just wanted to pop in and say 'hello' he was just as happy with that as well," adds Yates.



John Burnett chats with natural resource ecology and management students **Adriana Negron** and **Carter Oliver** on the steps of Farmhouse museum on Iowa State campus. **Burnett** is the college's 2014 Outstanding Adviser and recipient of Iowa State University's Award for Academic Advising Impact.

Isenhardt says many NREM students have told him they "would not have made it through, if it hadn't been for John's efforts." Burnett has helped students with problem solving in times of adversity, such as keeping up with course requirements after the death of a loved one. And he's been there for them in times of celebration, such as attending graduation celebrations and a U.S. citizenship ceremony.

"It's hard to understate how much students respect and appreciate John as an adviser. They know they are his top priority and he has their interests at heart," says Isenhardt.

Adriana Negron came to Iowa State from Puerto Rico in 2010. She will graduate in December in animal ecology, having completed a pre-vet, wildlife care option. She is a peer mentor for NREM transitional and transfer students and says Burnett helps with things that may seem small to others, but can be very stressful to students.

"Getting into a class you need and fixing your schedule, learning how not to procrastinate and how to manage your


schedule and just breathing and relaxing – all those things John helps us through with patience and good humor," she says.

Bobbi Provost, an animal ecology junior from a suburb of Chicago, agrees. "John is just amazing. Every semester he makes sure I know what I need to graduate. I'll go in there panicked and I'll walk out much more calm and knowing what's going on."

Negron says Burnett "has been that solid rock for me, that person I can count on when I'm having a difficult time. One winter I wanted to transfer to Florida where it was warm, and he said, 'Think about it.'"

Burnett says students "need to know someone is keeping them accountable. And I hope they know that someone cares about them."

They do.

"When I talk to my parents, I say, 'I have a grandpa here. It's all okay.' He worries like a grandfather will," says Negron. "When you're doing something bad, he'll tell you. But he is the first person in that row of persons cheering for you, backing you up every second of the way." 

GREAT TEACHERS

BORN AND MADE

By Melea Reicks Licht

Some people are born to teach.

Seasoned professors like Maynard Hogberg can spot them. Hogberg, chair of animal science at Iowa State, says he knew immediately Jodi Sterle was one of those people.

"I could tell from the moment I met her as a student at Michigan State. With a take-charge attitude and a passion for teaching it was obvious," Hogberg says. "I knew then she would be a faculty member I would want to hire someday."

In 2011 Hogberg ('66 ag and life sciences education, '72 MS animal science, '76 PhD) got his wish, and Sterle joined the Department of Animal Science as an associate professor and undergraduate teaching coordinator.

Prior to moving to Iowa, Sterle was an associate professor and extension swine specialist at Texas A&M University for 13 years where she earned numerous awards for excellence in teaching and service.

Sterle went to the University of Missouri to earn her master's and doctorate degrees in swine reproductive management after

Hogberg refused to retain her as a graduate student upon completing her bachelor's at Michigan State in 1993 while he was chair of animal science.

"Looking back it was the best thing for me, and I had many wonderful opportunities in Missouri, but at the time I was furious at him for not taking me on as a graduate student," she says. Both Hogberg and Sterle remember it as a defining point of their friendship.

Working alongside her mentor was a strong draw for Sterle to Iowa State, but she says the decision was based on many factors.

"What attracted me most to this position was the department's outstanding national reputation. The energy and enthusiasm on campus, especially from students, was palpable. It was obvious this was a great place to be, with programs and plans already in place to prepare the next generation of industry leaders," she says.

The Eldred and Donna Harman Professorship for Excellence in Teaching and Learning also was a draw for Sterle. As

holder of the professorship, she uses the additional funding provided by the gift to advance undergraduate teaching in the department. Faculty submit proposals to her for the funds. "I've funded everything from teaching workshops, to video production to enhance classes, to emergency scholarships," she says.

Megan Clouse, an advisee of Sterle, received an emergency scholarship through the professorship in 2011 after her father died during her first semester.

"I made the decision to stay home and mourn his death with my family. I moved out and didn't think coming back was an option," Clouse says. "Without ever meeting me, Dr. Sterle took me under her wing. She called me, talked to me about my situation and said if money was an issue, they could grant an emergency scholarship."

The money from the Harman endowed professorship brought Clouse back to Iowa State and Sterle's continued support has seen her through her remaining semesters. "I don't think I can adequately express how



Jodi Sterle is always looking for teachable moments. Many of which happen working with students outside the classroom on activities like Bacon Expo. The student-powered, educational event is one of Iowa State's fastest growing traditions and was named 2013 Event of the Year.

grateful I am to have her as a professor and an adviser," she says.

Sterle is the second recipient of the Harman Professorship, Doug Kenealy was the first to receive it when Eldred ('47 animal science) and Donna Harman of Waterloo established the fund in 2010. Eldred is a retired vice president of American Federal Savings.

She teaches the Introductory to Animal Science 114 course that Doug Kenealy taught for decades. She's still occasionally referred to as, "the new Kenealy." "Except Dr. Kenealy is way nicer than I am," she jokes.

Known for her expertise, warmth and "tough love," Sterle has quickly become a student favorite. Many refer to her as their "other mother."

"She's a professor who cares about her students as people. We're like her kids," says Brady Zuck ('14 animal science) a solutions development specialist with Elanco. "We can talk with her about school, club events, personal issues and she offers real-world advice," he says.

As an adviser to more than 90 students, Sterle considers herself a guide along students' journey, not the one planning the route.

"I've had students ask me to tell them what classes to take. I tell them to leave my office and reschedule their appointment after they decide what classes to take," she says. "This isn't my degree it's yours, I tell them. When they come back we review their choices and make sure they're on the right track."

In addition to 114, she also teaches a course on contemporary issues in agriculture and a course on the art and heritage of livestock, which reviews the role of animals in the development of culture throughout

the world. She estimates she sees more than 1,075 students in her courses each year.

"She provides an excellent learning environment," says Patrick Frank, a senior in animal science. "Her classroom is open to discussion and she strongly encourages student interaction."

In her role as undergraduate teaching coordinator, Sterle oversees who teaches which classes, handles difficult discussions between faculty and students and greets every new student.

Animal science students are 75 percent women, and 70 percent are from non-farm backgrounds. The department experienced record enrollment this fall with 1,077 total students, which Sterle says presents both challenges and opportunities. (...continued on page 8)



STORIES EXTRA: www.stories.cals.iastate.edu

Jodi Sterle advises Block & Bridle, which hosted the ISU Hunger Fight with Meals from the Heartland this fall. During the event more than 370 volunteers packaged 60,264 meals in four hours to be sent to Africa. Visit STORIES website to see videos of the ISU Hunger Fight and Bacon Expo 2014.

"SHE'S A PROFESSOR WHO CARES ABOUT HER STUDENTS AS PEOPLE. WE'RE LIKE HER KIDS"

A trusted expert in the pork industry, Jodi Sterle's research spans every corner of swine science.



Photo: Barb McBrean

"We work to maintain the quality of our curriculum as well as the personal attention we give our students," Sterle says. "We offer innovative courses, hands-on learning experiences and increased opportunities outside the classroom through student organizations, study abroad and internships."

Her research program includes published research from every corner of swine science from carcass quality to artificial insemination to biosecurity.


Sterle is always looking for teachable moments whether in the classroom or in the show ring. In addition to serving as a judge at state and county fairs, her family maintains an active show schedule with her sons, Jake and Jackson, who show pigs, steers and lambs.

The pork industry regards her as a trusted expert on contemporary issues. One of the many ways Sterle serves the industry is as an adviser to the Pork Checkoff's Youth Pork Quality Assurance (PQA) Plus program which focuses on food safety and animal well-being training.

"Consumers are paying more and more attention to how animals are raised and cared for. As such, we must prepare all producers - newcomers and veterans - to assure they're aware of the best on-farm practices available," says Sterle.

Bill Winkelman, vice president of producer and industry relations for the National Pork Board, says Sterle is one of their strongest partners supporting efforts in both youth programming and interaction with swine extension specialists.

As adviser for Block & Bridle and Bacon Expo, and a former adviser for CALS Student Council, she often can be found on campus late into the evening working along students.

"I believe that much of a student's development and learning occurs outside of the classroom, I enjoy getting to know my students better through club activities and study abroad experiences," Sterle says. "Watching them mature during their time here at Iowa State, making difficult decisions, handling stressful situations and learning to work with industry professionals is very rewarding." 

▶ CLASS NOTES, ALUMNI IN THE NEWS AND MORE: GET STORIES ONLINE MONTHLY

Want to hear what your classmates are up to and get timely news from the College of Agriculture and Life Sciences? Sign up for the monthly alumni e-newsletter *STORIES Online* to keep up-to-date between issues of *STORIES*. *STORIES Online* has class notes, research news, faculty, staff and student updates and notices of college events.

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PLEDGING HANDS TO LARGER SERVICE

IN THE MARGINS

Matt Wenger's event and customer service skills have proven invaluable for a number of non-profits he serves when not working at the ISU Meat Lab. As co-chair of Special Olympics Iowa Summer Games he works with athletes like Kim Lively, a fellow member of the Summer Games organizing committee.

By Haley Cook

SERVICE TO OTHERS IS A MANTRA MATT WENGER TAKES SERIOUSLY.

A self-proclaimed “life-long 4-H’er,” Wenger has implemented the skills learned in his youth as an instrumental volunteer to multiple organizations.

Wenger (’00 agricultural and life sciences education), program coordinator for the Iowa State University Meat Laboratory, has a penchant for event management and organization. He coordinates all special and annual educational programs offered by the Meat Lab. Outside of office hours he spends much of his time serving the Iowa 4-H Youth Development Program and Special Olympics Iowa.

“Matt gladly offers the time and energy needed to mentor individual students and, most importantly, continues mentorship and involvement with many of them through their college years and professional lives,” says Brenda Allen, extension program specialist for Iowa 4-H. “We’re also fortunate he shares his time and expertise in event planning with major initiatives like the annual Iowa 4-H Youth Conference,”

Wenger has served as an adviser for the Iowa State 4-H Youth Council and a chaperone during the Iowa State Fair for nearly a decade.

“I’m a product of the Iowa 4-H program; it was a great experience for me with lessons that have continued into my adult life. It’s fun to work with these youth, listen to their ideas and perspectives and see them receive some of the similar benefits that I did,” he says.

Wenger also is involved with Special Olympics Iowa, where he’s served as a volunteer for more than 13 years – most recently as co-chair of the Summer Games, held annually in May on Iowa State University campus.

“Matt is that special ‘go-to’ person when you have a project and need someone to step-up, create and understand the larger picture, then oversee the details,” says Elizabeth Beck executive director of Heartland Senior Services in Ames, Iowa, and fellow Special Olympics Iowa volunteer.

According to Wenger, the impact of an organization like Special Olympics far outweighs the time commitment, or stress of organizing a large event like the Summer Games. “It’s all about the athletes,” he says, “You see them during the games, participating in events and winning medals. It’s one experience that makes their year.”

He recalls a church service in his hometown of Fairbank, Iowa, during which a Special Olympics athlete was recognized for winning multiple medals during last year’s Summer Games. He says the experience was moving and helps define the role of volunteerism in his life.

“Whether we’re talking about a great 4-H project or an amazing Special Olympics athlete, it is, and always will be about their accomplishment,” Wenger says. ■



Photo: Gary Clarke

Crystal Jones-Sotomayor, a junior in genetics from Puerto Rico, has isolated a new mutation in a cancer gene using genome editing technology. She loves talking about her work with assistant professor Maura McGrail and tutors fellow undergraduates in genetics.

Photo: Bob Elbert

FINDING A CURE FOR CANCER IS CRYSTAL JONES-SOTOMAYOR'S DREAM

CONQUERING CANCER -

REMEMBERING A FRIEND

By Barbara McBreen

It's been a dream since she was a sophomore in high school in Aguadilla, Puerto Rico – after she lost her childhood friend to breast cancer. “I remember asking Michelle what she wanted to be when she grew up. She said ‘I don’t know, but I want to be in the history books like Christopher Columbus,’” says Jones-Sotomayor, a junior in genetics. “My hope is to do that for her.”

Cancer develops when a cell's DNA is damaged causing it grow out of control, form abnormal cells and invade the body. It's that DNA or genetic code that interests Jones-Sotomayor. In fact, she keeps a diagram of a cell in her laptop and on her cell phone. The diagram illustrates the

countless genetic pathways cancer can enter a cell.

Genetics has fascinated her since grade school when she learned about the Punnett Square – a simple method to diagram inherited traits and determine the probability of those traits being passed on to children.

“I absolutely loved the Punnett Squares in elementary school because you could visually see the dominant and recessive traits,” Jones-Sotomayor says. “I have always been a curious person and science is about asking questions.”

After her friend died, Jones-Sotomayor began looking for a top-rated genetics university program in the United States. That search led her to Iowa State University and Maura McGrail’s research lab, which is filled with tens of thousands of zebrafish. The zebrafish allow scientists to do genetics research on a large scale but at a reduced cost compared to other animal models used in cancer research. (Read more about McGrail’s work on page 27.)

Jones-Sotomayor met McGrail at an ice cream social hosted by her adviser when she was a freshman. She knew immediately that she wanted to be part of McGrail’s lab because they both had a common goal – searching for a cure for cancer. McGrail describes Jones-Sotomayor, who has been a part of her lab for more than three years, as a forward-thinking creative researcher who started out doing basic genetic mapping.

“Crystal uses cutting edge genome editing technology to create specific mutations in genes,” says McGrail, assistant professor in genetics, development and cell biology.

Jones-Sotomayor isolated a new mutation in a cancer gene identified in zebrafish and found the fish that inherit the new mutation also develop tumors.

“This result was really critical, because it validated our initial discovery that mutation of this gene promotes cancer,” says McGrail.

When asked about the mutant gene, Jones-Sotomayor gets excited. She goes into great detail about cutting genes and watching for brain-tumor development in

the fish. She explains how Transcription activator-like effector nuclease (TALEN) technology, which is used to cut and introduce mutations in the DNA code, helped her isolate the new mutation. TALEN technology was developed by plant pathologists at Iowa State.

In a lab filled with small aquariums, Jones-Sotomayor points out the zebrafish she’s watching.

“The idea was to cross those fish to find one that would transmit the new mutant gene to their offspring. After crossing and screening the offspring from 260 fish, I found it,” Jones-Sotomayor says.

“At this point we don’t have enough information to say exactly how the gene is involved in cancer,” Jones-Sotomayor says. “What I’m doing now is testing how this gene connects with cancer genes that control cell growth or repair damage to DNA.”

During her short career she’s presented her research results at six conferences, including the National Society for Advancement of Hispanics/Chicanos and Native Americans in Science conference in Los Angeles in October. She also won third place for a poster presentation at the 2013 Louis Stokes Alliance for Minority Participation IINSPIRE program.

Research is what Jones-Sotomayor is about. She says her friends got tired of hearing about genetics so she started

tutoring genetics students. She helps students with real life examples and videos because it’s a difficult topic to understand.

“It’s great because I get paid to talk about genetics,” Jones-Sotomayor says.

She also formed the iResearch club, a student organization for young scientists. She’s hoping the club will give her peers a place to share research, results and challenges.

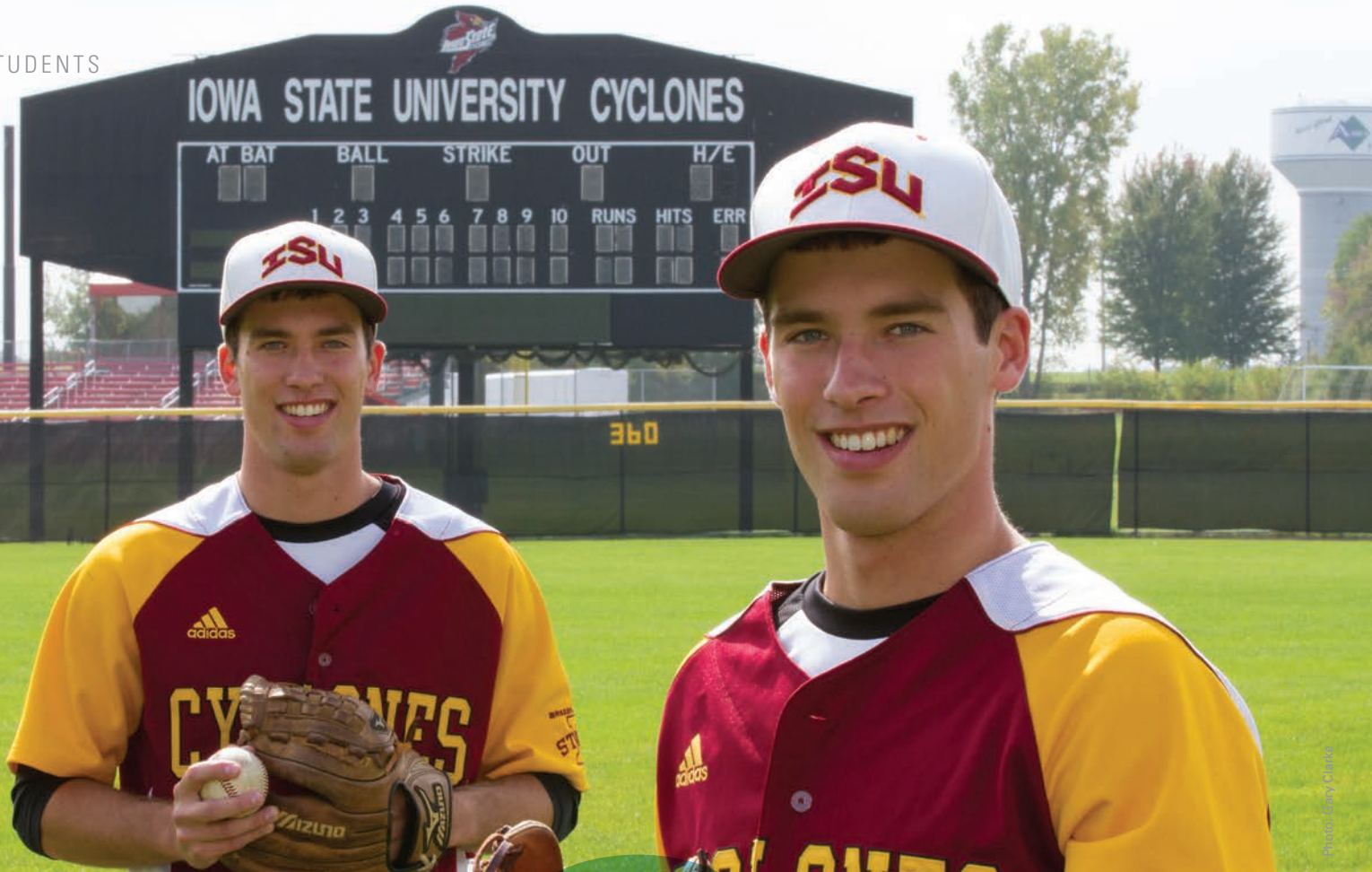
Jones-Sotomayor has a natural talent for lab research, but was struggling with class work as a freshman. She’s worked hard over the last three years and is now making the Dean’s list.

Last summer she worked as an intern studying the use of specific viruses to combat cancer at the University of Florida. That experience introduced her to a different approach to researching cancer and will add to her resume when she applies for graduate school.

Finding a cure for cancer won’t be simple, but she hopes researchers find some answers in her lifetime. And she’s hoping to make a discovery to contribute to that goal and honor her friend. **S**



Crystal Jones-Sotomayor, on the left, poses in a childhood photo with her friend Michelle Fruits and her brother John. Fruits’ diagnosis with breast cancer when she was 16 years old inspired Jones-Sotomayor to search for a cure.



FIGHTERS TEAM UP HOME & AWAY

By Ed Adcock

Adam and Austin Fichter have a lot in common. The fourth generation agriculture and life sciences students from Shenandoah, Iowa, started off their freshman year excelling as scholars and leaders. You could say they were cast from the same mold, especially when you see them.

The identical twins have made the dean's list every semester, both majoring in agricultural business, international agriculture and economics, with minors in entrepreneurial studies and general business.

They both are:

- Seniors graduating in May
- Involved in the Salt Company student ministry, leading Bible studies in the Greek community
- Members of the Iowa State baseball team (Adam plays shortstop and Austin is an outfielder)
- FarmHouse officers, with Adam serving as president last year and Austin this year.

Asked about their differences, they have to think: Adam is right-handed, although he bats left, and Austin is a southpaw.

Going to college with a sibling has been a plus, they say.

"We take a lot of classes together, which I think is helpful having two people listening and picking up what the professor's talking about and having somebody to study with," Adam says.

The brothers grew up on a corn and soybean farm, but want to explore other career options besides production agriculture. Eventually, farming might be in their futures, but they've enjoyed summer internships with a grain cooperative and Monsanto.

*In their packed schedule of club meetings, house functions, class, homework and church **Adam** (left) and **Austin Fichter** make time for playing on the Iowa State club baseball team.*

“They could write their own ticket to the future and do anything they want,” says Ebby Luvaga, a senior lecturer in economics who serves as their adviser.

She also hired them as sophomores to be peer mentors for the agricultural business learning communities and as tutors for agricultural business students in microeconomics classes. Luvaga looks for role models with leadership skills.

“They’re very organized and responsible. There’s something about them. They just stood out,” she says.

Luvaga also likes their sense of humor. She says, “After Adam introduced himself to the peer mentor class, Austin would say, ‘In case you didn’t know, we’re twins.’” They also took to wearing T-shirts saying, “I’m not Adam,” and “I’m not Austin.”

The brothers joined Luvaga’s group of students on a study abroad course to Argentina in their freshman year. Another travel course took them to Spain the following year. Those were the first trips outside the country for the Fichters.

Adam went to Tanzania with the Agricultural Entrepreneurship Initiative on a business development project with West

Central Co-op and Austin went to Australia with an economics and agronomy study abroad trip.

They are proud to say that, between the two of them, they have touched every continent except Antarctica.

“When I came to college, I didn’t have that in my mind at all, but it’s been really cool to be able to travel and do ag-related study abroad trips to so many different places,” says Austin.

Last summer, mission work took Austin to China and Adam to India, allowing Austin to turn 22 before his older brother (by five minutes) because of the time difference.

“I was 22 for a few hours before Adam was; the first time I’ve been technically older,” he says.

Leadership has been a part of their student experience since day one. Being members of the President’s Leadership Class helped them develop leadership skills at Iowa State. The class is open to 30 first-year students on the basis of co-curricular involvement, community and school services and academic achievement in high school. They met weekly at The Knoll to talk with university administrators, faculty and staff and state and local leaders about leadership opportunities on campus.


They started the class when Gregory Geoffroy was serving his last semester as president and then had the chance to get

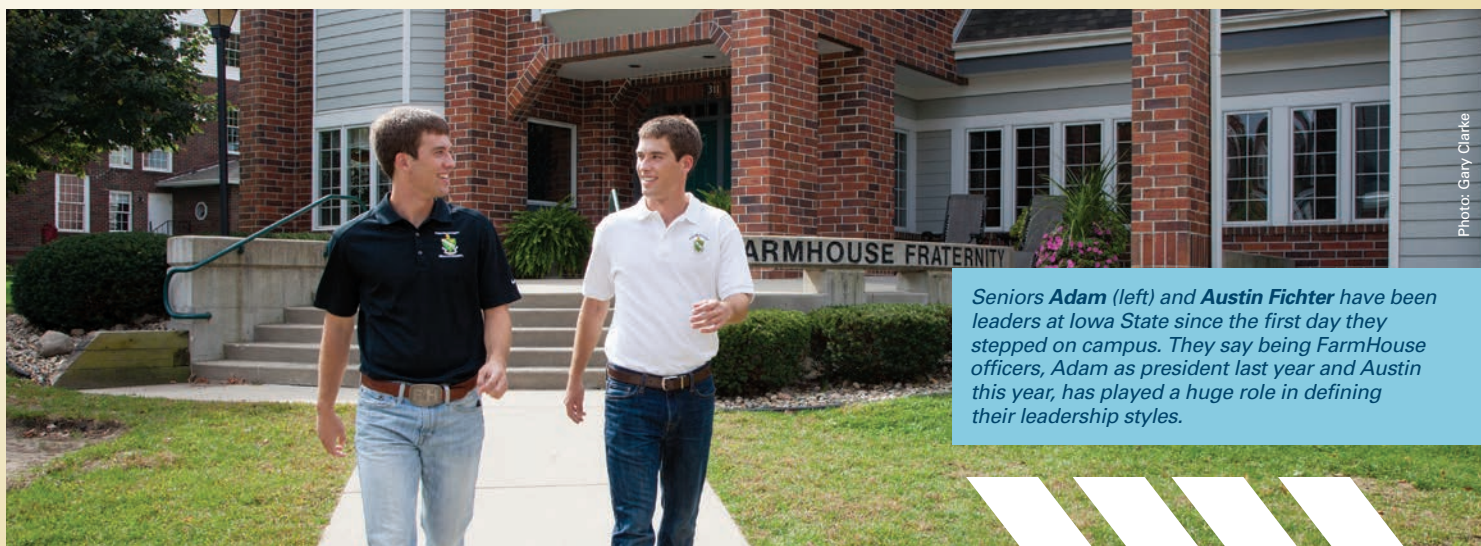
to know President Steven Leath during the transition.

“The other students who were in that class, you see now as heads of different organizations around campus. We have those relationships that were established freshman year,” Adam says.

Leadership within FarmHouse Fraternity occupies a lot of their time. Their grandfather and father were members – Albert Jr. “Corby” Fichter (’52 animal science) and Albert III “Corby” Fichter (’80 agricultural business) – a legacy they wanted to continue. An uncle and cousin also were members.

As presidents of the fraternity, Austin enjoys the chapter operations part of being an officer, while Adam likes the alumni relations aspect. Both agree it has played a huge role in their development as leaders, giving them the confidence and ability to tackle opportunities that have enriched their Iowa State experience. They say they have learned much from older members and are now giving back to the younger members.

FarmHouse has 99 active members and more than 1,000 alumni. The chapter, founded in 1927, is one of 29 nationwide and Canada. The Iowa State chapter consistently ranks among the top fraternities for academics, service and campus involvement and was presented the latest award for the top FarmHouse chapter. 



*Seniors **Adam** (left) and **Austin Fichter** have been leaders at Iowa State since the first day they stepped on campus. They say being FarmHouse officers, Adam as president last year and Austin this year, has played a huge role in defining their leadership styles.*

HANSEN CENTER, ELLINGS, SUKUP HALLS DEDICATED, OFFER MODERN EDGE

Iowa State University celebrated the dedication of Elings Hall and Sukup Hall, two new buildings that serve as the home for the agricultural and biosystems engineering department, and the Jeff and Deb Hansen Agriculture Student Learning Center this fall. The modern, state-of-the-art facilities “create a nearly unmatched learning environment for all students who are pursuing careers in agriculture and related fields,” says ISU President Steven Leath. Take a virtual tour of the new buildings at www.stories.cals.iastate.edu.

APPOINTMENTS, FACULTY SERVICE

Agricultural engineer **Jay Harmon** has been named the interim director of the Iowa Pork Industry Center. Harmon, a professor of agricultural and biosystems engineering and an extension livestock housing specialist, brings expertise in pork production systems to the position, which promotes efficient pork production technologies in Iowa.

Max Morris is the new chair of the Department of Statistics at Iowa State University. He succeeds Kenneth Koehler, University Professor, who served as chair since 2003 and remains on the faculty. The statistics department is coadministered by the College of Agriculture and Life Sciences and the College of Liberal Arts and Sciences.

CALS STUDENTS LEAD NATIONWIDE

Award-winning clubs and teams help agriculture and life sciences students become outstanding leaders. Recent top finishes include:

- **Agricultural Business Club**, outstanding student chapter in the nation for the eighth time in nine years.
- **Food Product Development Team**, second in the national Nutritious Foods for Kids Competition.
- **Soil Judging Team**, first place at Region 5 Collegiate Soil Judging contest.
- **Crops Team**, second place in the four-year school division at the 2014 North American Colleges and Teachers of Agriculture Crops Contest.
- **Livestock Judging Team**, third at the Arksarben Stock Show.

IOWA STATE RESEARCHERS JOIN FEDERAL EFFORT VS. HYPOXIA

Water quality researchers and extension specialists at Iowa State University have joined with scientists at 11 other land-grant universities in the Mississippi River watershed and the Mississippi River/Gulf of Mexico Watershed Hypoxia Task Force in a formal partnership to strengthen efforts to reduce the hypoxic zone in the Gulf of Mexico. Learn more about ISU's work to reduce hypoxia in the “dead zone” at www.stories.cals.iastate.edu.

AG ENGINEERING/AGRONOMY RESEARCH FARM MARKS 50TH ANNIVERSARY

Iowa State University Research and Demonstration Farms celebrated the 50th anniversary of its Agricultural Engineering/ Agronomy Research Farm Sept. 10.

The AEA Research Farm, as it's called, consists of about 1,160 acres located between Ames and Boone on Highway 30. It is devoted to mainly agronomy and agricultural and biosystems engineering department research

projects, with other Iowa State academic departments, centers and Extension and Outreach, the U.S. Department of Agriculture and the Iowa Crop Improvement Association participating.

Several facilities have been added around the AEA Farm in recent years: the BioCentury Research Farm, Livestock Environment Buildings Research Complex and the Field Extension Education Laboratory.

MELON MANIA SMASHES FRUIT FOR FUNDRAISER

Establish and Grow, a philanthropy organized by Iowa State students and staff, raised more than \$1,400 for children in Uganda with Melon Mania. At the September event more than 2,000 melons were used in carnival games. Since research performed on some melons made them unqualified to donate for eating, students decided to have fun and raise money with them before they became compost. Melon bowling, melon sculpture, melon pinball, strong-man toss and a hammer versus melon station helped raise enough money to provide about 300 Ugandan children school lunch for an entire year.



PESEK RECEIVES PRESIDENTIAL AWARD, PORTRAIT UNVEILED

John Pesek ('14 honorary alumnus), Charles F. Curtiss Distinguished Emeritus Professor in Agriculture and Life Sciences, was presented with the American Society of Agronomy Presidential Award on campus on Oct. 15. The ceremony also

included the unveiling of a portrait in his honor that will hang in the second floor of Agronomy Hall. Pesek served as head of the agronomy department from 1964 to 1990. He also served as interim dean of agriculture from 1987 to 1988. He is world renowned for his role in the 1989 National Academy of Sciences Report on Alternative Agriculture.

Dorothy Masinde (second from left, standing) visits with mothers about nutrition. They share what they learn with other mothers in the Kamuli District of Uganda. Many of these women have emerged as confident, strong leaders for childhood and maternal nutrition.

DIFFERENCE MAKERS



GOOD COMES FROM KAMULI

By Dorothy Masinde

When you tell Ugandans you work in the Kamuli District, one of the country's most rural and impoverished areas, they look at you wonderingly. Why would anyone go there? Can anything good come from Kamuli?

The answer is yes. Something good is coming from Kamuli and it has implications for other parts of the world gripped by hunger and poverty.

For the past decade, the Center for Sustainable Rural Livelihoods at Iowa State University has worked with numerous local partners in Uganda to train an army of change agents in Kamuli. We have been equipping the young and old with the skills to improve their lives through agriculture, nutrition, education and sanitation.

It is capacity building at its most fundamental, with agriculture as the driver for rural households to work toward food security, improved nutrition, economic development and opportunity.

The center's programs, funded primarily by private gifts, have touched 10,000 lives in more than 1,200 households.

Farmers improved crop and livestock practices, increasing food-secure families in some subcounties by over 50 percent.

Six nutrition education centers improve

the health of pregnant women and lactating mothers and rescue malnourished children.

Meal programs feed an 850-calorie lunch to 1,000 school children daily, with more than a third of the food grown in gardens established by Iowa State and Ugandan university students.

Fourteen boreholes provide clean water to more than 5,000 households and 2,800 students at nine schools, halving the number of cases of waterborne disease.

After 10 years, we have a growing number of change agents — farmers, mothers, fathers, college students, children — who've worked together with us and now have the potential to continue to be resources in service of their communities.

A good example are the mothers who have been trained to provide nutrition education to other mothers in the community. This past summer, I had the opportunity to introduce these Kamuli women to Ambassador Kenneth Quinn of the World Food Prize Foundation. During a visit to one of Iowa State's nutrition education centers, the Ambassador said he would not be surprised if one day one of them came to Iowa to accept the World Food Prize.

I've worked in development in Africa for 30 years. Over the past 10, I have seen

tangible differences. You see farmers not only feeding their families, but producing enough to market and generate an income. That's real change. You see children who were once severely malnourished, and now they are chubby-cheeked kids running between your legs.

And we keep creating change agents, both in Uganda and here in the United States. Three years ago, we had an Iowa State student intern at one of the nutrition education centers. After her internship was finished, she returned to Kamuli to volunteer for six months, despite having many other opportunities in the United States. She helped to establish a new nutrition education center and actually ran it for two months while a staff person was away. I was told that when her volunteer term ended, the mothers of Kamuli cried.

Can anything good come from Kamuli? Emphatically yes. Transformative change takes time. Many challenges remain. But I know the people there will never be the same, forever. ■

Dorothy Masinde is the associate director of nutrition education programs for the Center for Sustainable Rural Livelihoods at Iowa State University.

PUTTING PEOPLE FIRST

IMPROVING LIVES IN UGANDA WITH CLEAN
WATER, EDUCATION, FARMING

By Brian Meyer

Messages received in the Center for Sustainable Rural Livelihoods often can be read like testimonials to the center's work in Uganda over the past decade.

"Thank you to the Center for Sustainable Rural Livelihoods for being the engine of the transformation story that has blossomed on the lips of hundreds and thousands of beneficiaries in Uganda," wrote a student at Makerere University in Uganda. "I am grateful for being part of the service learning teams who were on the ground in rural Kamuli to witness this story. We have never remained the same."



The Center for Sustainable Rural Livelihoods marks its 10th year in 2014 of people-centered development in Uganda. The center's efforts with local partners have helped farmers achieve food security and increased the percent of Ugandan families able to meet their daily nutritional needs from 10 percent to 60 percent.



Photos: Brian Nonhecke

“Having participated in the efforts and works of CSRL in Kamuli, I write with gratitude on behalf of all those who have shared in the realized fruits so far,” wrote a former staff member with Volunteer Efforts for Development Concerns, the nongovernmental organization the center has worked with in Uganda for years. “I am touched by your sincere dedication to improve the quality of life of rural dwellers in our country. The programs run by the center have been and continue to be an inspiration to us all.”

In 2014, the Center for Sustainable Rural Livelihoods marked its 10th year of a people-first approach that has helped

Ugandan farmers achieve food security, improved household nutrition and stabilized income through sustainable crop and livestock production and access to marketing opportunities.

The center's programs have worked with more than 1,200 families in the Kamuli District and impacted the lives of over 10,000 people. The center and its partners have made substantial progress in combating hunger, malnutrition and poverty. The approaches have laid the groundwork for a higher quality of life for rural Ugandans, while teaching Iowa State and Makerere students what it takes to be

change agents in improving the lives of others around the world.

Uganda is blessed with a magnificent landscape and a rich culture, but its challenges include nearly 25 percent of the population living below the poverty line.

“That’s why agriculture has been the foundation of the center’s work,” says David Acker, associate dean for academic and global programs in the College of Agriculture and Life Sciences. “Improving agriculture is a stepping stone to help lift people out of poverty. Through efforts like farmer-to-farmer training and other agricultural programs, the center has seen the percentage of families able to meet

their daily nutritional needs jump from less than 10 percent five years ago to more than 60 percent now.”

The thread of food security begins but does not end in crop fields and livestock pens. It's a thread that must weave in education, nutrition and health, rural employment and incomes, access to markets, clean water, sanitation and sustainable natural resources. The center has addressed many of those areas as an educational resource for Ugandans of all ages, teaching them the skills and knowledge to help them sustain healthy, fulfilling lives.

Saving lives has been one result. The center's six Nutrition Education Centers have helped ensure proper nutrition for pregnant women and for their young children. “They've saved the lives of malnourished children,” says Dorothy Masinde, associate director of nutrition programs and a lecturer in the global resource systems program. “Several mothers who completed the training now lead the centers.”

Each year, Iowa State students work together with students from Uganda's Makerere University on service learning projects to establish and maintain school gardens at primary schools, educate students on agriculture, nutrition and hygiene. More than 150 Iowa State and Makerere students have participated since 2006.

“We want them to have an international experience that transforms their perspective about what it means to be global citizens,” says Gail Nonnecke, associate director for education for the Center for Sustainable Rural Livelihoods.

“The program challenged me in so many ways and seeing how it has really made an impact has reignited the passion I have for helping people,” says Trisha Nielsen, a senior in horticulture and global resource systems.

The center's work has been made possible by ongoing support from benefactors committed to helping the poorest of the poor. Thanks to the generosity of founding benefactors Gerald A. Kolschowsky and Karen A. Kolschowsky, and a rising number of other donors, the center began working in the Kamuli District a decade ago, always with a broader goal in mind.





"We wanted the center to be a role model for how to work closely with rural communities and cultures to alleviate hunger and poverty," says Jerry Kolschowsky ('62 agricultural business). "Its approach and process has proven itself as one that could be reproduced anywhere in the world. I sincerely hope its results stimulate new kinds of thinking and partnerships among leaders in government, communities, universities and philanthropy."

Iowa State University President Steven Leath, who visited the Kamuli District in 2013, says, "Thanks to the donors, the programs in rural Uganda are some of the greatest examples of the commitment our faculty, staff and students have in helping

society. Donor-supported programs like the center help showcase how Iowa State truly cares about people in the world and improving their lives."

"Transformational" is the only word to describe the results the center has achieved, says Wendy Wintersteen, endowed dean of the College of Agriculture and Life Sciences.

"Severe malnutrition has been addressed," Wintersteen says. "Access to clean water has increased. Improved farming practices have been implemented. Education is preparing the next generation to become future leaders in their communities. Peoples' lives have been changed. You can see it in their faces." ■

STORIES EXTRA: www.stories.cals.iastate.edu

ALUMNI WORK FARMER-TO-FARMER IN UGANDA

Iowa women farmers, including six agriculture and life sciences alums, traveled to Uganda as part of a U.S. Agency for International Development Farmer-to-Farmer project. Together with women farmers in the Kamuli district, they improved post-harvest grain handling practices for maize, field beans and soybean, developed collective marketing strategies and implemented record keeping. Alumni in the group were: **April Hemmes** ('82 animal science), **Lori Lang** ('97 agricultural education), **Jenny Thomas** ('77 animal science), **Sheila Dotts Hebenstreit** ('80 horticulture), **Cindy McCollough** ('81 animal science) and **Connie Tjelmeland** ('76 botany, '81 MS agronomy). ISU Extension and Outreach Value Added Agriculture Program coordinated the program with the Center for Sustainable Rural Livelihoods and VEDCO, a non-profit organization based in Uganda. Read more at www.stories.cals.iastate.edu.

PREPARING IOWA'S WOODLANDS AND FORESTERS FOR THE FUTURE

Iowa forests cover 2.9 million acres or eight percent of its total area. Managing those timbered areas can be challenging. By Barbara McBreen

That's why landowners, both public and private, annually call on students at Iowa State University. Landowner's goals range from increasing timber value to enhancing wildlife habitat to improving recreational access.


STUDENT CONSULTANTS, PROFESSIONAL RECOMMENDATIONS

Every spring forestry seniors enroll in a capstone class to evaluate and prepare recommendations for landowners on how to manage forested acres. Since 1975 students have assessed forested-lands in every corner of Iowa.

Clients have ranged from church congregations to divers salvaging old growth river logs. Each year there's a waiting list of clients for the program. They hope to work with Iowa State students to improve Iowa's forests while the students improve their communications and management skills.

John Tyndall, natural resource ecology and management professor and adviser, says the department never has to advertise for projects because of the class' reputation. Each spring Tyndall and





Iowa State grad **Paul Tauke**, bureau chief and state forester for the Iowa Department of Natural Resources, says communications skills are key to preparing the next generation of great foresters, which may include his son Leo.

Dick Schultz, natural resource ecology and management University Professor, select from a list of projects for students.

"It's not just an academic exercise and a good experience for the students, these clients come back because they know they are getting high quality advice," Tyndall says.

Students select their clients, meet to understand the landowner's goals and analyze information about the property using online resources. The students also spend several days on site surveying, measuring, sampling water and inventorying plant and animal species.

"Students alert landowners if there is an issue of concern, such as an invasive species or water quality problem," Tyndall says.

At the end of the semester the students provide a management plan with several options from basic maintenance to more intensive and costly suggestions.

Schultz says the continuum provides clients the option of implementing suggestions based on their resources.

PLAN COMES TO LIFE FOR ISU FORESTS

It's rare for students to be able to watch their recommendations get implemented, but it's an opportunity Louis Hilgemann has relished. Hilgemann, a graduate student in natural resource ecology and management, helped evaluate a property owned by Iowa State three years ago.

His team developed a forest management plan for the Everett Casey Nature Center and Reserve near Boone, Iowa. The 76 acres was a gift donated to the Iowa State English department in 2009 from Everett Casey, a 1946 Iowa State engineering graduate.

"They wanted a place for students to connect to nature," Hilgemann says. "We recommended and have implemented prairie restoration, trails and meeting areas, invasive species removal and we hope to do stream bank work in the future."

In May, the forestry seniors advised three private landowners and three Iowa State University research farms. Mark Honeyman, director of Iowa State's research farms, says they are using the student expertise as a springboard for more intensive management.

"Our first step is to inventory what's in these woodlands, so we can be more intentional about how we manage these areas," Honeyman says.




Photo: Contributed

COMMUNICATION KEY TO GREAT FORESTRY

Paul Tauke ('88 forestry) is the bureau chief and state forester for the Iowa Department of Natural Resources. He says a misconception about professional foresters is that they spend a lot of time alone. The reality is that foresters are always working with people. This class is key to helping students hone their communications skills.

"You can be a great technical forester, but if you can't communicate to people around you and the people you work with, then you'll just be a technical forester, not a great forester," Tauke says. **S**



Louis Hilgemann, a graduate student, says it's been inspiring to watch his team's recommendations implemented at Iowa State's Everett Casey Nature Center and Reserve near Boone, Iowa.



EXPLORING, LEARNING, DISCOVERING ON ALL SEVEN CONTINENTS

By Haley Banwart

More than 400 students from the College of Agriculture and Life Sciences went abroad on travel courses, to study for semester and year-long programs and to complete service learning and internships abroad during the past academic year. Study abroad programs are integrated into the curriculum and offer a wide array of unique and challenging opportunities for students looking for academic adventure. These transformative experiences offer students exceptional ways to polish their academic and pre-professional skills, making them uniquely suited to be future leaders in their fields

Antarctica

Landon Kane, senior in agricultural business and international agriculture from Fairbank, Iowa.

Landon Kane will come one step closer to reaching his goal of hitting all seven continents through study abroad programs this December on a 10-day trip to Antarctica.

What motivated you to participate on a trip to Antarctica?

Going to Antarctica will kind of be like taking a trip to the moon. Because there are no permanent residences, we will be lodging on a vessel on the open sea and

using smaller boats to tour Antarctic ice monuments and to view marine mammals, penguin colonies and bird life. I am looking forward to experiencing how vast the world truly is and learning about other research and entrepreneurial opportunities other than the traditional ways we think of agriculture in the United States.

Africa

Kacey Klemesrud, sophomore, animal science, from Osceola, Iowa.

Kacey Klemesrud gained patience and appreciation while working to improve nutrition and agriculture education at a primary school in Uganda.

How did your trip to Uganda inspire you?

My first impressions of the impoverished region were swept away when I realized how colorful the Ugandan culture was. Despite the sights of extreme poverty and malnutrition, everyone I met was always smiling and very welcoming. It was eye-opening to be surrounded by this positive attitude and it strengthened my appreciation for the differences in the way people live.

Australia

Mason Lewis, senior, agronomy, from Monroe, Iowa.

Mason Lewis explored his interests in learning about the difference between U.S. and Australian crop production by completing two trips down under. One as part of the study abroad program and one as a member of the Iowa State Crops Team competing in the Australian Universities Crops Competition.

How did your travel experience change your perception of agriculture on a global scale?

Looking out across the Australian landscape, it was amazing to see the diversity of cropping systems. I enjoyed learning about the production of other farms including vineyards, rice, cotton, wheat, canola and orchards. Being able to tour these farms while still being a tourist was the perfect travel experience for me. Studying abroad allowed me to walk on the other side of the world while maintaining my connections to agriculture.



A service learning trip to Uganda gave **Kacey Klemesrud** a greater appreciation for the differences in the way people live.



Nick Jackosky developed his team building skills while participating in the Dean's Global Agriculture and Food Leadership Program in Rome.



Jacob Lamkey is spending a semester in the Virgin Islands teaching sustainable agriculture to students in kindergarten through eighth grade.

South America

Courtney Harder, senior, agricultural business and international agriculture, from **Hancock, Iowa**.

As a former marketing intern with CASE IH, Courtney Harder was grateful to tour one of the company's sugarcane harvesting plants in Brazil and realize its global agricultural impact.

How has the study abroad program influenced your career decisions?

My travel experience has inspired me to open my mind to global career possibilities. I've witnessed the impact of global ties and business relationships and I've learned the importance of being able to cater to cultural tendencies. I look forward to applying my experience and knowledge to different regions and audiences. Agricultural practices may be done differently across the globe, but in the end we are all working toward the same goal.

Europe

Nick Jackosky, junior, global resource systems and environmental science, from **Lakewood, Ohio**.

Competing as an Iowa State cross-country athlete helped Nick Jackosky learn how to be a team player. He developed a new appreciation for working with others while participating in the Dean's Global Agriculture and Food Leadership Program in Rome.

What is an important life lesson you gained while working in Rome?

The research I conducted with my colleagues gave me an overarching view of the world, its resources and all of its moving parts. By working with experts at the Food and Agriculture Organization and by listening to stories shared from citizens across the globe, I was able to learn about how others live from an economic, social, food and agricultural standpoint. I think I brought my own expertise to the team by having a limited agricultural background.

Asia

Nathan Davis, (opposite page) senior, food science and global resource systems from **Sioux City, Iowa**.

A single course at Iowa State made a large impact for Nathan Davis. After completing a class about the exploration of race and ethnicity in the United States, he decided to immerse himself in a new culture on a study abroad trip to China.

How did your travel experience make you a better global citizen?

Being from Iowa I had a set view of agriculture, but my trip allowed me to see the big picture of world food issues. Traveling to China helped me realize my desire to solve food-related challenges and

to be at the forefront of today's efforts. I consider myself an experiential learner. Diving into a new environment and being in situations that were unfamiliar to me really changed my global perceptions.

North America

Jacob Lamkey, senior, agronomy, from **Gilbert, Iowa**.

Spending a semester in the Virgin Islands was something Jacob Lamkey never imagined himself doing, but spontaneity inspired him to jump on the opportunity. Lamkey is currently on the island of St. John where he is teaching sustainable agriculture to students in Kindergarten through eighth grade.

How have you applied the studies and skills you have learned at Iowa State?

I have applied the knowledge and skills learned from my classes in agronomy to maintain the school garden and to teach lessons in the classroom. My day-to-day activities help me become a better communicator of agricultural concepts as I interact with students who have a basic background in plant science. This experience has expanded my own knowledge and will assist me as I take on my role as a teaching assistant in Agronomy 114 next semester. **S**



STORIES EXTRA: www.stories.cals.iastate.edu

Hear more from these globetrotting students about their experiences abroad in a video online.

Several industry and farm tours were included for students visiting Iowa for the 37th International Association of students in Agricultural and related Sciences (IAAS) World Congress. These students toured Wassehaar Grain Operations near Prairie City, Iowa.



LEADERSHIP ON A GLOBAL SCALE

By Barbara McBreen

STUDENT AG LEADERS FROM AROUND THE GLOBE CONVERGE AT IOWA STATE

World president – that’s the title Genna Tesdall held as a 21-year-old student at Iowa State.

As world president of IAAS – the International Association of students in Agricultural and related Sciences – she helped bring the organization’s annual World Congress to Iowa State in July. It was a first. The event was the first congress to be held in the United States since IAAS began 57 years ago.

Tesdall, a senior in global resource systems, worked with Rebecca Clay, a junior in agronomy and director of the World Congress session, to lead Iowa State’s efforts in hosting the visiting students for 19 days. The 53 students from 18 nations spent time exploring Iowa, discussing the future of farming and conducting IAAS business.

IAAS is focused on sharing information worldwide about agriculture through conferences, seminars, exchange programs and internship opportunities. The international student group is based in Leuven, Belgium. Its mission is to promote the exchange of ideas at the international level and improve understanding between students in the fields of agricultural and related sciences.

As part of their visit the students held general assembly business sessions for five days in Iowa State’s Memorial Union. If you listened you could hear accents from around the world. If asked, students would excitedly share their impressions of Iowa and the United States.

Damien Tschopp, a co-leader for the IAAS Switzerland exchange program, explored the western National Parks before taking a bus ride through the Midwest to

Iowa. Tschopp said each country has a different approach to agriculture.

“I saw two farms in Iowa with several differences,” Tschopp says. “That’s what’s great about IAAS. I can share what I discovered at this World Congress with students in my country.”

Several students were amazed by the size of Iowa’s farms and machinery. Tschopp pointed out that an average farm in Switzerland is 44 acres compared to farms in Iowa averaging thousands of acres.

Hai Le Van from Vietnam said Iowa’s gross domestic product is equal to his entire country. He said he could see returning to Iowa State to get his doctorate degree or working with manufacturers in Iowa to import machinery to Vietnam.

IOWA STATE STUDENTS FIRST TO ENGAGE INTERNATIONAL GROUP

Iowa State University hosted the first International Association of students in Agricultural and related Sciences (IAAS) World Congress in the nation this summer, but it also was the first university in the nation to join the group in 2005.

Along with those two firsts, Emma Flemmig was the first from the United States to be the IAAS World President in 2007.

Shelley Taylor, Iowa State Global Agriculture Programs assistant director, says IAAS is an international group run by students for students. She added that the group has offered numerous leadership and travel opportunities since Iowa State joined.

Students have attended most of the IAAS World Congress sessions since Iowa State formed its own chapter in 2005.



Above: Students in Agricultural and related Sciences at IAAS World Congress got a taste of Iowa's farmers' markets in Des Moines. Pictured from left to right, **Steven Adams**, vice president of exchange from Belgium; **Samuel Navwarette**, 2015 IAAS president from Mexico; **Genna Tesdall**, 2014 IAAS president from Iowa State; **Ekaterina Muravleva**, IAAS national director from Russia; and **Olga Volkova**, a student IAAS member from Russia.

Below Left: IAAS students enjoyed guided tours of Iowa State University campus.



Seeing Iowa State and Iowa from the international viewpoint is what Tesdall enjoyed.

"It was special for me having it here," Tesdall says. "I could see Iowa with a sense of wonder through the eyes of my dear IAAS colleagues."

Clay was proud to show off her home state and organize tours at Iowa State, Iowa farms, industry locations and Iowa's park system. The tours included the Hy-Vee distribution center, the Iowa State BioCentury Farm, the Des Moines Farmers' Market, a winery, the Story County Conservation Center, Monsanto, Syngenta, Wassenaar Grain Operation and Vermeer manufacturing.

"These students came away with a new perspective about Iowa farmers and farms. We showcased a wide diversity of agriculture in the Midwest," Clay says.

For Samuel Navarrete, who was elected the World President for 2014-15, the Des Moines Farmers' Market was a highlight. He said they have markets in Mexico, but not farmers' markets.

"You get to know the people who produce the food and you can appreciate their work. It's a personal connection with food," Navarrete says.

The experience, Tesdall says, helped her learn about international project management. She said it also helped her understand how to be flexible, holistic and the rewards of working with her international peers. It also changed how she looked at her education.

"This experience took my education from the theoretical to the practical and applicable," Tesdall says.

Experience with international management and managing the youth Non-Governmental Organization for IAAS has given her the confidence to choose careers that could include starting her own international agriculture company or working in the international agriculture sector. **S**



STORIES EXTRA: www.stories.cals.iastate.edu

Hear from international students about their impressions of U.S. agriculture and the importance of partnering at the international level.



TACKLING GLOBAL FOOD SECURITY IN 5 NEW WAYS

By Lynn Laws

“The planet is becoming more crowded, hungrier, thirstier and hotter,” says Manjit Misra, Global Food Security Consortium director, Seed Science Center director and professor of agricultural and biosystems engineering at Iowa State. “The consortium is attempting to alleviate poverty both domestically and internationally through collaborative partnerships.” Launched in the summer of 2013, the consortium was developed in response to Iowa State President Steven Leath’s call to university researchers for multidisciplinary programs “that tackle some of the grand challenges facing our world.”

Worldwide, 842 million people suffer from chronic hunger and even more suffer from undernutrition, according to a 2014 United Nations report. Food security – having reliable access to a sufficient quantity of affordable and nutritious food – is a complex issue that requires a broad range of interventions in agriculture, water supply, policy development and education.

Here are five ways the Global Food Security Consortium (GFSC) has begun to tackle this important challenge.

GROWING a worldwide network of food security experts.

“Our goal is to bring the best people together to collaborate on projects related to food security,” says Max Rothschild, co-director of the consortium, associate director of the Center for Sustainable

Rural Livelihoods and Distinguished Professor in agriculture. Rothschild and Misra grow the consortium through one-on-one contacts and meetings, such as the April research symposium held at Iowa State, where more than 180 scientists and community leaders discussed innovation in food security science. Fifty researchers and community leaders at Iowa State and other campuses and organizations in the United States and abroad are now members of the consortium.

DEVELOPING new science and technology.

Five major research focuses are promoted by the consortium: Germplasm and Seed Systems; Climate Resilient Crops; Climate Resilient Animals; Post-harvest and Utilization; and Policies, Regulations and Trade. Within each research focus, research teams also address capacity building, socio-economics and natural resource management.

BRINGING new funding to the table. Consortium teams of global experts are responding to funding opportunities and seeking out grants to support their research and new technologies. For example, last fall animal science professors Susan Lamont and Jack Dekkers successfully partnered with researchers at University of California, Davis and two universities in Ghana and Tanzania. Together they obtained a grant from the U.S. Agency for International

Development to study the genetic makeup of chickens in Africa to breed for heat-tolerance and disease-resistance.

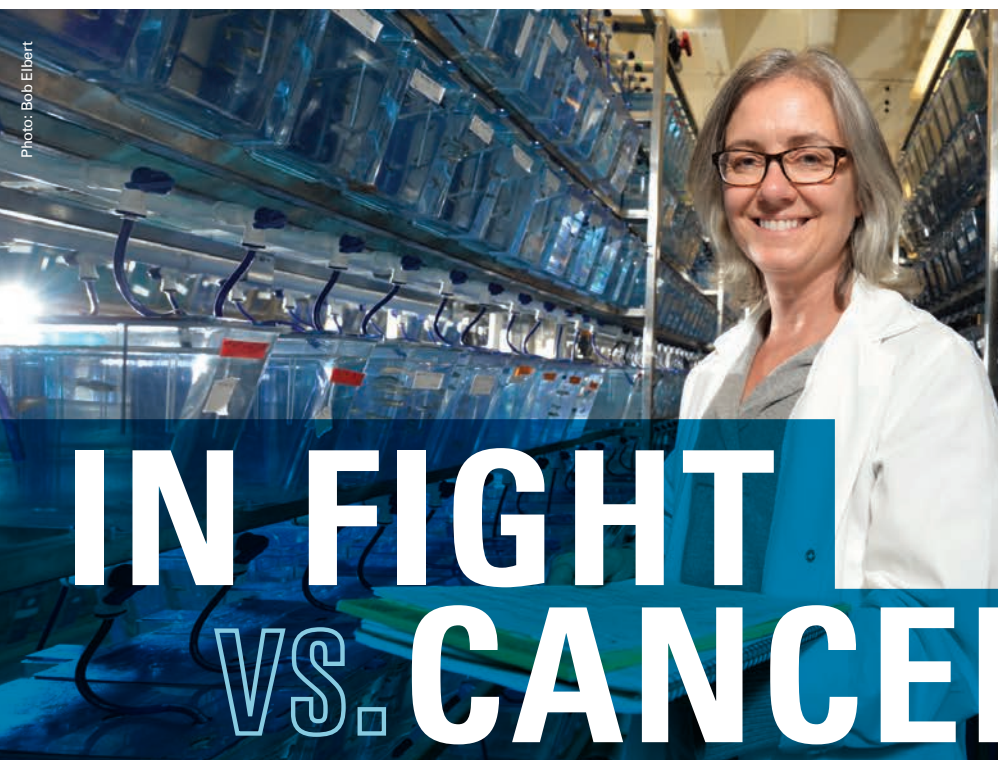
SHARING science and technology with the world.

“Advances in sustainable crop and livestock science and transferring the technology to the private sector and communities are at the very heart of solving this grand challenge,” says Rothschild. He and Misra traveled to Washington, D.C., in October to meet leaders in government, implementing agencies and foundations. In addition to technology development, the significant scholarly exchanges and research among consortium members is expected to foster entrepreneurial opportunities for Iowa, the nation and smallholder farmers worldwide.

TRAINING the next generation of global food security scientists.

Consortium members are working to create opportunities and attract increasing numbers of students to Iowa State and affiliated partner institutions, in the area of food security research. For example, one consortium team made up of North American, European and African experts is working to strengthen post graduate programs integrating seed science, business and systems at six universities in Africa. Support was provided by the Bill and Melinda Gates Foundation. **S**

Thousands of zebrafish serve as models for **Maura McGrail's** cancer-fighting research. **McGrail** studies the development of glioma, a brain cancer in humans.



By Ed Adcock

LITTLE MODELS LEAD TO LARGE BREAKTHROUGHS

Inch-long zebrafish are used as a model organism by several Iowa State researchers. Maura McGrail, an assistant professor in genetics, development and cell biology, is studying them for a project to understand the development of glioma, a brain cancer in humans.

She says an advantage to using zebrafish is that her team can do genetic research on a large scale at a relatively low cost unlike using mice, a prime cancer-research model that is expensive to raise.

"The same genes that work in humans and mice, and other mammals, are functioning in fish as well. We're trying to understand how the disruption of networks of genes called conserved pathways contributes to carcinogenesis," she says.

The pathways altered by cancer are normally required for an organism to grow and develop. Understanding these networks during the organism's development gives scientists insight into what is happening when cancer occurs.

"In cancer research we are trying to figure out what changes in DNA lead to

cells growing in an uncontrolled fashion," McGrail says. "Having large populations of affected individuals, in our case fish, allows us to use genetics to find those changes in the DNA."

The zebrafish are providing insight into the genes that could be functioning in the development of glioma, a brain cancer, in humans. Previous work developed a genetic system that identified genes involved in carcinoma and sarcoma.

The system used transposons, pieces of DNA that move around the genome and cause mutations when they insert into genes. Examining where the transposons landed in the zebrafish tumors revealed genes involved in DNA repair and cell growth that also are mutated in human cancer.

McGrail's present project will take that system for cancer gene identification and use it to specifically look for new genes that promote glioma formation and progression. If the transposon "hits" the same gene over and over again in tumors from many different fish, this provides evidence that the gene is involved in cancer.

In addition to fish care, student researchers in her lab carry out independent projects to study how genes are involved in brain development and cancer. (Read more about one such project by Crystal Jones-Sotomayor on page 10.)

The prognosis of those with malignant glioma is poor, she says. Surgery is an option, but can result in damage to surrounding brain tissue. Understanding how genes work together in advancing disease will provide insights into potential targets for new therapies. The Roy J. Carver Charitable Trust and the National Institutes of Health National Cancer Institute are funding the research.

McGrail's husband Jeff Essner also works with zebrafish, researching how blood vessels grow. "Our research programs dovetail quite a bit. Understanding the role of blood vessels and tumor growth is very important for developing cancer therapies. We take two different approaches to the same question," she says. **S**



Enrique Villalobos stretches out his arm and points. He lifts his sunglasses and his eyes meet those of a little girl, barefoot and standing in the doorway of a small, simple home. Located on the outskirts of a large pineapple plantation near San Carlos, Costa Rica, she sees hundreds of visitors touring the Finca Corsicana pineapple fields. He waves. “Hello little one,” he says. “Her life is much different from yours,” he tells an Iowa State student sitting near him on the tractor-driven trolley.

CULTURAL CONNECTIONS IN COSTA RICA

By Melea Reicks Licht





Enrique Villalobos includes a stop at his dairy farm, Ira Rosa, as part of the annual study abroad course. From the hazy mountainside, students pull and classify soil samples and pet a few of his prized Jerseys. Toucans can be heard in the surrounding trees.



For Villalobos, guiding Iowa State students through Costa Rica is about more than teaching environmental science and soils. It's about inspiring love and respect for his home country.

Villalobos ('83 PhD agronomy), a retired agronomy professor from the University of Costa Rica, is the alumni host for an Iowa State study abroad course – Soils, Crops and Water of Costa Rica. Developed in 2006 in partnership with Randy Killorn, emeritus professor of agronomy, the course is led by Lee Burras ('81 agronomy, '84 MS), professor of agronomy.

A guide, interpreter and teacher, "Don Enrique" is the patriarch for a new batch of approximately 25 Iowa State students who visit each spring break. He and Burras plan the course together, carefully crafting each day to maximize learning, cultural understanding and fun for the students. Burras leads a predeparture course preparing the students for what they will see and experience on the trip.

"It is a pleasure to travel with the Iowa State group. My time at Iowa State was so influential that I enjoy this opportunity to give back and spend time with dear friends from Iowa," Villalobos says. "I also get to keep learning new things about my home country and share what I know and love about it."

Villalobos calls upon his former students to host the visiting Iowa Staters.

"Our students love this course because of Dr. Villalobos. He is Costa Rica's best ambassador and professor," says Burras. "Thanks to his recommendations, students may spend their evenings swimming in the Pacific Ocean at the hotel's beach while we make day trips to see oil palm plantations, rice farms, sugar cane fields and processing plants."

Ten percent of Costa Rica's land is devoted to agriculture. Plantation agriculture and sustainable or subsistence farming is practiced in various regions.

"We learn why organic farming is so common in Costa Rica – namely that it is profitable here and considered more environmentally friendly from a cultural perspective," Burras says.

Circling the central region of the country, students get their hands on a number of agricultural products as well as the volcanic soil it grows in. Coffee is the country's oldest and largest export. Students also see dairy cows, forage crops, potatoes, flowers and greenhouses in the volcanic ash region. In the lower elevations they see pineapples, citrus, cassava, plantains, bananas and more.

At each stop, students hear directly from experts such as agronomists, organic crop specialists, farmers and agribusiness owners.

They learn about production challenges and management techniques in this fertile, tropical region.



"The faculty on this trip truly made the experience," says Bailey Morrell, senior in agricultural studies. "Dr. Villalobos is very knowledgeable. Whatever questions we did not ask or did not have time to ask while on our tours, we asked him on the bus rides between stops."

The course is not limited to agronomy or environmental science majors. "Having students with various backgrounds and interests on the trip was almost as much of an experience as it was being in a different country," says Morrell. "Interdisciplinary approaches with regards to agriculture will be paramount to addressing future issues."

This year the itinerary included a stop at Carlos Rodríguez's ('08 MS plant pathology) home to visit his third-generation dairy farm. Rodríguez raises corn, sorghum and soybeans as forage crop – a rarity in Costa Rica – and runs an agronomic consulting and equipment



Iowa Staters walk the rows of organic lettuce and potatoes near Zarcero, Costa Rica after tasting tomatoes in the greenhouses and talking with the organic farmer.



*Many students of **Lee Burras** say the chance to travel with him is as much of a draw to Costa Rica as the destination. Burras engages the students in discussions about everything from soil to higher education to life well lived.*

business. The variety of soy he grows is from lines developed by Villalobos. Rodriguez's cattle also feed on melon and waste from produce processing plants.

Standing on the porch of his family home, built by his grandfather, Rodriguez answered students' questions.

"How many cows do you have?"

"We milk 180 and have 390 total head – a crossbreed of Gyrolando and Holstein, which is good for this area. We get 1,500 gallons of milk every two days."

"What's your largest pest problem?"

"Vampire bats."

"Vampire bats?"

Rodriguez nods.

Crops are always in season and continually evolving. He says with no winterkill to offer reprieve, crop pests and disease are particularly aggressive in Costa Rica – problems compounded by increasing herbicide resistance.

Villalobos and Burras find learning opportunities at every turn, from pointing out shrubberies on the University of Costa Rica campus, "Look – a legume! Who can tell me how this plant fixes nitrogen?" to giving students a chance to use their Spanish way-finding through San Jose and talking with site hosts.

At age 66, Villalobos matches the students step for step. A student of Dick Shibles, he came to Iowa State to earn his doctorate with the encouragement of his supervisor at the University of Costa Rica.

"Scores of Costa Rican scientists trained at Iowa State University thanks to an anonymous benefactor that supported the partnership beginning in the 1970s," says Villalobos.

He served as a professor and director of the University of Costa Rica Center for Research in Grains and Seeds (CIGRAS). Among his contributions are the development of soybeans better suited to tropical conditions and more than 20 research publications on tropical crop physiology, genetics and production.

In 2001, Villalobos published an essential and popular Spanish language textbook, "Physiology of Tropical Crop Production."

Burras says the ultimate legacy of Villalobos' 32 years at the University of Costa Rica is the impact of his popular, technically rigorous instruction on hundreds of agronomists working throughout Central America.

This year's trip included a dinner with Iowa State University alumni working and living near San Jose – many at the University of Costa Rica.

"Meeting our alumni was a highlight of the trip for me. It was touching to see how much they loved Iowa State, and I learned so much hearing about their life and careers in Costa Rica," says Allie Ferguson, junior in agronomy. "It was like we were instant friends."

Cristobal Montoya Marin ('82 PhD ag economics) was among the 14 alumni and guests who attended the dinner. He echoed the students' sentiments, grateful for an evening to celebrate their Iowa State connection.

Adriana Murillo Williams ('07 PhD crop production and physiology) hosted the event connecting fellow alumni, many former students of Killorn's as well as Villalobos'. As a professor and director of CIGRAS, she holds the same post Villalobos held at the peak of his career (read more about Williams in the next issue of STORIES).

Burras and Villalobos will welcome their 10th group in March 2015. Another long-standing course, let by Mark Gleason in plant pathology and microbiology, also travels annually to Costa Rica. Groups from the University of Costa Rica travel to Iowa State University annually as well.

"It is not an overstatement to say Iowa State University made the greatest contribution to the University of Costa Rica's academic development," says Villalobos. "Many professors here were trained at Iowa State." ■



*This year's trip included a dinner with Iowa State University alumni working and living near San Jose. **Allie Ferguson**, junior in agronomy, says meeting the alumni was like becoming "instant friends."*

SCHOLARSHIPS BOOST

STUDENT INTERNS

By Ed Adcock

Kelley Glanz, a senior majoring in public service administration in agriculture, traveled to Scotland last summer to intern for Nourish Scotland, which seeks to make locally grown food more accessible.

Nicole Schubert, an animal ecology senior, spent the summer interning at the New England Wildlife Center in Massachusetts assisting with the medical treatment and rehabilitation of wildlife.

Elise Kendall, a junior in global resource systems, interned in Nepal, researching the impact of Machhapuchhre Development Organization's organic farming education program.

Internships like these offer valuable experiences to students, but don't always provide pay.

Very few of agricultural internships are unpaid, says Mike Gaul, director of Career Services for the College of Agriculture and Life Sciences.

"The good thing in agriculture is that typically 95 percent of internships are paid," he says. "Internships in agriculture are just too competitive."

He says the trend, especially in social sciences, is to offer unpaid internships. Also those that have international

components, along with zoos, wildlife related facilities and veterinary clinics tend to be unpaid.

So he decided to offer 10 scholarships of \$500 each from the proceeds of Ag Career Day. About 40 students applied.

Given the increased debt load associated with today's college experience, these scholarships are designed to help cover some of the financial burden of potentially expensive internships, Gaul says.

"It may seem nominal, but \$500 could cover airfare or a couple months rent," he says.

Schubert says her internship at the wildlife center provided a variety of activities including many personal "firsts" like helping put on a cast, taking an X-ray by herself and putting an animal under anesthesia.

"This internship provided me with great hands-on experience and knowledge about the veterinary world I am excited to build on in the future," Schubert says.

Working for Nourish Scotland exposed Glanz to new concepts about that country's agriculture and how its policies affected the industry. But it also helped her understanding of American agriculture.

Nicole Schubert gained valuable hands-on experience during her internship at the New England Wildlife Center in Massachusetts. A scholarship from CALS Career Services helped offset her living expenses during the unpaid internship.

"Overall, I enjoyed my experience at Nourish Scotland and came away with new perspectives to agricultural production and knowledge about our food system," she says.

Kendall got to contact farmers in villages of Nepal's mountainous regions during her internship. She researched the effectiveness of Machhapuchhre Development Organization's programs to update organic farming methods.

It was an ideal introduction to what she hopes to be a career in international development.

"This also will help strengthen my application for the Peace Corps, which I hope to join after I graduate," Kendall says.

The internship experiences available to students become more diverse and exciting every year, Gaul says.

"This is such a unique time in a student's life and to have these experiences possibly diminished by lack of funding would truly be sad. The majority of these students are the ones we want representing Iowa State and serve to strengthen the college's reputation throughout the world." ■

VIEWS FROM THE MOUNTAIN

ENRICHING LIVES THROUGH EDUCATION AND AGRICULTURE IN NEPAL

By Lynn Laws

Tiara Sandoval walks to a village meeting on a cool Saturday morning. Her host family's village is Middle Hills Region, in the district of Syangia, is located along the side and top of a hill. Far to her left she can see tropical forest and to her right on the other side of the small village, yellow-green terraces of millet lead down to a river. The millet, which was planted between stalks of maize soon after the summer's harvest, is thriving in this monsoon season. This morning the sky is clear and Sandoval can see the Annapurna Mountains and, on a hilltop a few hours away by bus, the World Peace Pagoda in the city of Pokhara.

Sandoval, 24, completed her bachelor's in animal science and international agriculture at Iowa State in 2012. Later the same year, she and 19 other Peace Corps volunteers arrived in Nepal to receive training and be assigned to a local community at risk of food insecurity. The volunteers teach community members about agriculture, nutrition, hygiene, sanitation and how food preservation can be used to generate income.

"Over 70 percent of the population in Nepal is involved in agriculture, but the food produced is often not enough to fulfill nutritional needs of adults and especially children," says Sandoval. "Farmers often have limited access to improved seeds, new technologies and market opportunities."

In her village community, Sandoval has provided trainings on mushroom cultivation; off-season vegetable production, using nurseries and plastic tunnels; and post-harvest practices with use of solar dryers, including how to construct the dryers with natural materials at hand. She encourages families to create small kitchen gardens to produce their own foods for home consumption and to sell the excess for additional income.

Sandoval also convenes a weekly youth group at the local primary school, where she has provided health and hygiene training, created a world map mural on one classroom wall and is now teaching English to 12 youth, ages 9 to 16. Resourceful and attuned to the needs of others, when Sandoval saw the school had no library, she contacted the Asia

Foundation's book donation program in Nepal and asked them for a donation. The school now has a library with 188 English and Nepali children's books and textbooks.

"I was moved by a documentary I saw at a Peace Corps meeting, called 'Girl Rising,' about how educating girls can break cycles of poverty in just one generation," Sandoval says. It inspired her to take on her largest project to-date – a weeklong GLOW (Girls Leading our World) camp for girls in three Nepal



When **Sandoval** saw the school had no library, she contacted the Asia Foundation's book donation program in Nepal and asked them for a donation. The school now has a library with 188 English and Nepali children's books and textbooks.



Sandoval and her host family plant millet, which they will grind for flour to make bread. Shown are Sandoval and her host family's grandmother, Purnima Sen.

Photos: Contributed



districts. Thirty-six girls participated in the sessions and games, covering the topics of empowerment, gender roles, women's health and career and life skills, such as budgeting. Sandoval says opportunities like this make a difference.

"Girls don't have an easy life in Nepal. Some may never again leave their village. It's rewarding to see them get excited about meeting other girls, see a new city and learn about life's possibilities," says Sandoval.

Sandoval's own support system in Nepal consists of other Peace Corps volunteers, whom she can reach by phone, and her host family's grandmother. "She is one of the most active people in the community, is the mothers' group president and is so involved in agriculture that she is known as The Vegetable Mother," says Sandoval.

Sandoval organized and led a GLOW (Girls Leading our World) camp for girls from three Nepal districts. Nepal's Middle Hills Region can be seen in the background.

"She introduced me to community members, helped get community members involved in my projects and has taught me a lot."

Sandoval says her Iowa State course work provided the agricultural knowledge base needed for her work in Nepal. Her study abroad experiences enhanced her knowledge and gave her the personal skills essential to successfully navigate new situations and cultures very different from hers. These included short programs of study in China (agricultural globalization) Brazil (agricultural engineering) and Ecuador (tropical crops and soils). She also spent a semester in Brazil studying at the Federal University of Viçosa.


"Having studied abroad, I know how to figure out how to communicate when I don't know the language. I learned to be flexible and patient when something goes not as planned or is done differently. And after being exposed to a variety of cultures and situations, I was prepared for living for an extended period abroad," says Sandoval.

"Iowa State produces mature, service-oriented graduates well-suited to Peace Corps service," says Jessica Mayle, public

affairs coordinator for the Peace Corps. "Tia and other Peace Corps volunteers in Nepal are making a difference in a variety of ways, big and small, both in the work they're doing and the friendships they're building in their host communities."

Sandoval would like to get a master's in international development with a focus in agriculture and continue working abroad. "I have gained a huge appreciation for working abroad and on projects at the grassroots level. I can see myself enjoying this type of work all over the world in the future," says Sandoval.

This morning, Sandoval is listening in on a meeting of the farmers' and mothers' groups who have recently finished developing and installing a waterline system to bring water to every home in the village. Conversation revolves around budget, working with the district agricultural office and dividing up the work that remains.

"I would like to think I am helping my community," she says. "I've had an amazing experience here in Nepal and can't imagine being more fulfilled or feeling more at home in any other Peace Corps post." 

BIG BOAR



The 2014 Iowa State Fair Big Boar, Peabody, co-owned by several Iowa State alumni and friends raised more than \$8,000 in memory of Brad Peyton ('79 farm operations) to benefit the Shining City Foundation.



Photos: Contributed

HONORS BIG LEGACY, FUNDS FOUNDATION

Motivated by the humanitarian need in China, **Brad Peyton** founded the Shining City Foundation before his death in 2013. Together with his wife, Claudia, friend Scott Raecker, and board members and ISU alums Dan and Deb Timmons, the foundation has helped thousands of children abroad.

By Melea Reicks Licht

A team of Iowa State alumni and fans brought home the prize for the Biggest Boar at the Iowa State Fair in August. The purple ribbon wasn't their true motivation. The crew honored their friend "Peabody" and raised money for his international charity.

Peabody, the Hampshire boar, was named for Brad Peyton ('79 farm operations) – an investment advisor and co-founder of the Shining City Foundation – who died last year following a battle with pancreatic cancer. Peabody was Peyton's nickname when he was a member of the Alpha Gamma Rho fraternity at Iowa State.

Peabody, owned by Pleasant Hill's Friends of Peabody, weighed in at 1,273 pounds. Co-owner Paul Kruse ('80 farm operations) says the team raised more than \$8,000 by selling Peabody T-shirts to support the foundation's work with orphanages, medical clinics, churches and other projects abroad.

"We have all been getting together the first day of the Iowa State Fair for the past six or seven years. Our group consists of John Sweeney ('80 animal science, '84


DVM), Don Erickson ('79 industrial education), Steve Duesenberg ('79 industrial administration), Gerald Peterson ('81 construction engineering), ISU supporters Joe Pritchard and Mark Whaley, Duke Reichardt – our token Hawkeye fan who's married to ISU alum – myself and Brad's wife Claudia ('80 ad design)," Kruse says.

Peabody was not the group's first try at the state fair title of Big Boar. In 2012, Kruse teamed up with Peyton, Sweeney and others to raise "Fred Hoiboar," named for Iowa State Men's Basketball coach Fred Hoiberg. At 1,079 lbs., Hoiboar didn't take home the gold, but his third place finish raised funds and awareness for Hoiberg's cause of choice – Camp Odayin for kids with heart disease.

Lori Dvorak, a "future Iowa Stater" from Bondurant, cared for and showed Peabody with support from two of Peyton's pledge brothers who also donated the T-shirts – Craig Rowles ('82 DVM), owner of Elite

Pork Partnership in Carroll, and Tom Dittmer ('79 farm operations), owner of Grandview Farms in Eldridge.

"Our family has been humbled by all the kindness shown to us during Brad's illness and after his passing. The contributions made to Shining City Foundation as a result of the Biggest Boar project will make a significant difference in the lives of many people around the world," Claudia says. "Ultimately, this was not about Brad but about growing people in their Christian faith and helping others. For that Brad would be pleased."

Founded to help care for abandoned children in China in 2001, the Shining City Foundation has grown to serve other geographic areas. In total, the Shining City Foundation has provided more than \$500,000 to development initiatives abroad to enhance the health and welfare of underserved people. 



STORIES EXTRA: www.stories.cals.iastate.edu

In a video filmed before his death in 2013, alum Brad Peyton offers his thoughts about what motivated him to create the Shining City Foundation. The foundation has provided more than \$500,000 of support to development initiatives around the world.

Agronomy grad **Jim Blome**, president and CEO of Bayer CropScience, shared his thoughts on emerging trends in agriculture at the 2014 **Carl and Marjory Hertz** lecture last spring.



Photo: Ryan Peterson

BLOME LOOKS AHEAD

IN BIOTECH, BEES, BIG DATA

By Melea Reicks Licht



Photo: Tyler Teske

*During his visit to campus **Jim Blome** visited with members of the Iowa State Agronomy Club. **Blome** was a member as a student and also worked with entomologist **Jon Tollefson** as a research assistant.*

Jim Blome, president and CEO of Bayer CropScience, says today's farmer wears more hats than ever before.

"I like that because I'm a seed dealer. I have a lot of hats," he jokes. "The next generation of farmer is CEO, entrepreneur, investor, human resources director, scientist, analyst and more."

Blome ('85 agronomy, pest management) says the average age of farmers in the United States is 58, and in this age of "Big Data" they are keeping up with technological advances and an increasing amount of information. He says possibilities for the future are exciting.

"The data will help us improve crop yield, but we need to help them know what to do with it," Blome says. "Drones and 3D

printers in agriculture will revolutionize our industry. Just think, if you need a part just print it. Or use your cell phone camera to get a read on a blood test, or tissue analysis on a leaf sample."

Blome shared his thoughts with a lecture hall full of Iowa State students, farmers and agribusiness people as he offered the 2014 Carl and Marjory Hertz Lecture on Emerging Issues in Agriculture last spring.

Raised on a farm near Hubbard, Iowa, Blome oversees one of the world's leading crop science companies, with seed, crop protection and non-agricultural pest control products. The company has a workforce of more than 20,000 with a presence in more than 120 countries.

Under his leadership Bayer CropScience opened the Bee Care Center located at Bayer's North American headquarters in the Research Triangle Park in North Carolina. The \$2.4 million center brings together some of the brightest minds in agriculture and apiology to develop comprehensive solutions for bee health. It complements other Bayer Bee Care centers in Clayton, North Carolina and Monheim, Germany.

"Healthy honey bees mean a more substantial and nutritious food supply for us all, and we understand the many complex issues affecting honey bees' ability to thrive, including disease, parasites such as Varroa mites, genetics and more," says Blome.

Blome credits his Iowa State adviser, Brent Pearce, with helping him understand agricultural chemicals and genetically modified traits. He also worked as an undergraduate research assistant for former entomology professor Jon Tollefson ('75 PhD entomology) and was a member of Alpha Kappa Lambda.

He looks back on his time at Iowa State with a smile. "I was the post hole digger rating roots for an ISU rootworm scale created by Tollefson," he says. "Today we battle in the field with biotechnology."

In recognition of outstanding leadership and service to agriculture, Blome was honored with the College of Agriculture and Life Science's Henry A. Wallace Award in 2013.

In addition to his work at Bayer CropScience, Blome has held executive positions at Valent USA Corp, Agrilience LLC, Agtrot International and Griffin LLC. He serves on executive boards and councils for CropLife America, National FFA, North Carolina Agricultural Biotechnology, Iowa State University MBA and the National Wild Turkey Federation. 

STORIES EXTRA: www.stories.cals.iastate.edu

Go online to listen to audio of Bayer CropScience President and CEO Jim Blome's entire Carl and Marjory Hertz Lecture on Emerging Issues in Agriculture.

VOLUNTEERISM BUSY SECOND CAREER FOR MENTE

By Melea Reicks Licht

Service has long been a part of Glen Mente's life. And now, in retirement, he's enjoying his second career as a "professional volunteer."

Mente met his wife Mary Jo through their involvement in 4-H. Together, the two spent a combined 25 years leading 4-H clubs. It could easily be said they raised generations of 4-Hers in addition to their two daughters.

An Iowa High School Basketball Hall of Famer, Mente ('61 animal science, '63 MS) continued honing his skills playing for Iowa State. After joining Kent Feeds in Muscatine, Iowa, in 1964 as a swine nutritionist the president had a request.

"He asked me to get rid of my crew-cut so I would appear older and more authoritative," Mente says. He complied, but quickly re-embraced his signature cut after retiring as senior vice president in 1996.

At Kent Feeds Mente was instrumental in developing an industry leading "flavorizing" process for baby pig feeds, a protected natural protein (PNP) concept in ruminant diets and a patented open Front Pork Production Center. "We set the industry trend for a 'grind and mix' medicated supplement concept for swine feeds."



Photo: Gary Clarke

Glen says, "moving to Ames after retirement provided so many volunteering opportunities to keep us busy, and, the best part is, we enjoy everything we do."

Tops on Glen's list is meeting people and narrating Iowa State University campus bus tours as a volunteer for the alumni association. A homemaker and community volunteer, Mary Jo has been involved extensively with the alumni association, 4-H and Mary Greeley Medical Center.

"Every organization needs a Glen and a Mary Jo. Committed and thorough volunteers, they offer up their time, talents and treasure gladly and the association and our alumni have benefited greatly from their generosity," says Jeff Johnson, president and CEO of the ISU Alumni Association.

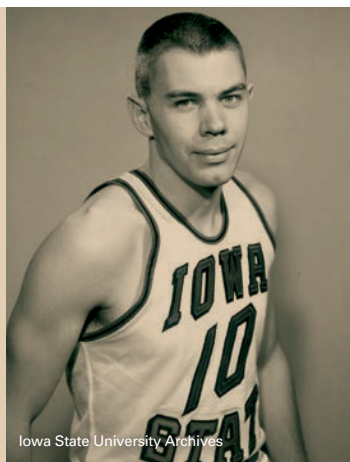
Glen and Mary Jo are celebrated by the organizations they serve. His honors include the State 4-H Alumni Award, the ISU Alumni Association's Alumni Medal, Iowa Games Volunteer of the Year, Special Olympics Iowa Outstanding Volunteer and the State of Iowa Governor's Volunteer Award. The couple received the National Service Award from the ISU Alumni Association and was inducted into the Iowa 4-H Foundation Honor Court.

He served as president of the Iowa 4-H Foundation and as a governor of the ISU Foundation. As a past president of the ISU Alumni Association Board of Directors the Mentes served as co-chairs of The Circle, the association's organization for former leaders. They also are members of the Order of the Knoll Campanile Guild and President's Circle.

Glen and Mary Jo provided funds to name the Mente Welcome Center and the Mente Conference Room as part of the recent renovation of Curtiss Hall.

"We wanted to be sure prospective students always experience the welcoming environment I felt when I enrolled in the college," Glen says. "The Mente Welcome Center provides college staff the best environment to begin this relationship."

Glen's pace would keep time with any current Iowa State student, whom he encourages to get involved. His rally cry for them: "Go for it!" 📸



Iowa State University Archives

*Following his career at Kent Feeds, **Glen Mente** and his wife **Mary Jo** have become celebrated volunteers with many organizations including Iowa 4-H, Special Olympics and the ISU Alumni Association. Retirement also brought Glen back to his signature crew-cut – a look he sported on the ISU basketball court.*



CALS ALUMNI HONORED DURING HOMECOMING

The College of Agriculture and Life Sciences and the Iowa State University Alumni Association presented awards at the annual Alumni Association Honors and Awards Ceremony on Oct. 10. Read more about awardees at www.stories.cals.iastate.edu.

Sig Cornelius ('76 farm operation), back row, center — CALS Floyd Andre Award

Antoine J. Alston ('00 PhD ag and life sciences education), front row right — CALS George Washington Carver Distinguished Service Award

Steven Bradbury ('81 MS entomology, '85 PhD), front row second from left — CALS Henry A. Wallace Award

Laurie A. Hueneke Martens ('01 animal science, international ag), front row second from right — CALS Superior Achievement Award for Early or Mid-Career Alumni

Kevin Drury ('83 ag business), not pictured, — ISU Alumni Association Alumni Medal

Matthew Eddy ('99 ag and life sciences education, '09 MS), back row, right — ISU Alumni Association Outstanding Young Alumni Award

Nupur Ghoshal ('95 genetics), front row, left — ISU Alumni Association Outstanding Young Alumni Award

Rachel L. Hymbaugh ('96 horticulture), not pictured — ISU Alumni Association James A. Hopson Alumni Volunteer Award

Douglas ('71 horticulture), back row second from right, and **Ellen** ('72 zoology) **Nelson**, back row left — ISU Alumni Association Alumni Service Award

NATIONAL AWARDS, HONORS



Jerry Hatfield ('75 PhD agronomy), director of the USDA Agricultural Research Service (ARS) National Laboratory for Agriculture and the Environment at Iowa State University, inducted into the ARS Science Hall of Fame.

Dave McKenna ('97 animal science, '99 MS, '99 PhD meat science and food science and technology), director of meat research applications at Tyson Foods, Inc., Distinguished Achievement Award from the American Meat Science Association.



Jason Ross ('00 animal science), associate professor of animal science at Iowa State, Lloyd L. Anderson Endowed Professorship in Physiology, 2014 American Society of Animal Science Early Career Achievement.

Terry Steinhart ('70 agricultural and life sciences education, '90 MS), Iowa State University Extension and Outreach swine program specialist, National Association of County Agriculture Agents Distinguished Service Award.



DEAL LECTURE BY BILL NORTHEY AVAILABLE ONLINE

Iowa Secretary of Agriculture **Bill Northey** ('81 ag business) delivered the 2014 William K. Deal Endowed Leadership Lecture on Sept. 30 "Telling Our Story: The Future of Iowa's Farm Families." Northey is a fourth generation farmer and raises corn and soybeans on his family farm near Spirit Lake. Watch his complete presentation online at www.stories.cals.iastate.edu.



HANNA RECOGNIZED FOR APPLIED RESEARCH

Mark Hanna ('73 agricultural engineering, '75 MS) received the Dean Lee R. Kolmer Award for Excellence in Applied Research from the College of Agriculture and Life Sciences at Iowa State on Aug. 28. An agricultural engineer with ISU Extension and Outreach, Hanna was recognized for his research to find practical solutions to challenges faced by crop producers.



CRUCIAL CONVERSATIONS: MANAGING FOR TODAY AND TOMORROW

By Lani McKinney

"I don't think it's worth it," says Patty Walker. She sits across the kitchen table from her daughter-in-law, Kris Walker, on a bright October morning. One look out the picture window and it is obvious harvest is in full swing. Patty is making reference to something she has seen too much - families being torn apart over the dispersion of the family farm. "It breaks my heart when I hear people fighting over an estate. My family is the most important thing and I don't want it broken up over land," she says.

This was the driving force behind her decision to attend an Annie's Project course – Managing for Today and Tomorrow – in Ames with Kris ('00 animal science) in 2012. It was part of a new curriculum supported by the Beginning Farmer and Rancher Development Program of the National Institute of Food and Agriculture, USDA. Madeline Schultz, Women in Agriculture program manager with Iowa State University Extension and Outreach in

the Value Added Agriculture office, facilitated the course.

"Like Kris and Patty, many farm women are central to farm family communication. Managing for Today and Tomorrow was designed to help farm women talk with family or other business partners about business, estate, retirement and succession," says Schultz. "Successfully transitioning land, other assets, management and labor to the next generation takes good planning over several years," she says.

Patty takes the course workbook along when she meets her lawyer. It's just the compass she needs to navigate unfamiliar topics and terms and also prompts her to ask questions she would have never thought to ask. "I pick up something new every time," she says.

Annie's Project is a national educational program dedicated to strengthening women's roles in farming. Over the past 10 years, courses have been taught in 34 states.

In Iowa the program is administered by Iowa State University Extension and Outreach. Annie's Project fosters problem solving, record keeping and decision-making skills in farm women and connects women to their local resources.

Since taking the transition planning course, Patty and her husband, Jim, have updated their will. Patty, a mother of four and grandmother of nine, stresses the value of succession planning, "You need to think about it before you're sick. Along with our will, we have a living will to explain why we have things the way they are." Although only Kris' husband, Bill, plans to farm, the course compelled Patty to meet with each of her children individually to help them understand the transition plans.

"The best part was the ride home from the course," Patty remembers, smiling at Kris. "Kris and I would talk non-stop and plan how to communicate what we learned." Later, Patty would lay in bed at night talking to Jim about things

Farmers **Patty** (left) and **Kris Walker** show Iowa State University extension's **Madeline Schultz** (center) around their farm. **Schultz**, Women in Agriculture Program Manager, facilitated a succession planning course they participated in as part of the **Annie's Project** – an educational program for farm women.



Participating in the course, *Managing for Today and Tomorrow*, helped guide the Walker family through some crucial conversations about the long term management of their farm. **Bill, Kris, Patty and Jim** (from left to right) credit the course for helping them talk openly.

discussed in class. "I could not stop talking about what I learned," she laughs. It prompted conversation about retirement, a topic Jim often avoided. "That conversation wouldn't have happened without this course," says Patty.

"We're confident we have a basis as far as information or places to go for information," says Kris. Patty nods and chimes in,

"And we've at least had a conversation." Managing for Today and Tomorrow and other Iowa State extension courses they've taken have helped them work towards successfully transitioning the Walker family farm to the next generation. 



STORIES EXTRA: www.stories.cals.iastate.edu

Take a trip to the Walker farm and hear from the family about their experience with Annie's Project and how the transition planning course helped them plan for the future in a video online.

A PLACE TO CALL HOME

By Haley Cook

THE NEIL AND DARLENE HARL COMMONS

Since opening in the fall of 2013, the Neil and Darlene Harl Commons (Harl Commons), has become a favorite place for College of Agriculture and Life Sciences students to gather.

Made possible by Neil Harl ('55 agricultural and life sciences education, '65 PhD economics), Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences, and emeritus professor of economics, and his wife, Darlene ('81 sociology), the Harl Commons includes an open area for informal gatherings, private meetings spaces, a public computer bank and the Global Café.

"The Harl Commons is a great place for students to hang out, do homework, or grab something to eat. It's one of my favorite places on campus," says Cameron Jodlowski, sophomore in agricultural and life sciences education. "The technology in the conference room also makes it the perfect spot to meet for group projects."

The Mente Conference Room, named for long-time college supporters Glen ('61

animal science, '63 MS) and Mary Jo Mente, features a conference table for 10 people, a white board and 70-inch screen that can be used for group presentations. The space is reserved exclusively for students, and in such demand the college's student services unit has set up a new reservation webpage allowing students to check the space's availability and request reservations, says Tim Carey, student services specialist for the College of Agriculture and Life Sciences.

"The student use of the Harl Commons is exactly what Dr. Harl described in his vision for the space—a place where students feel at home," says David Acker, associate dean of the College of Agriculture and Life Sciences. "I make a point of escorting first time visitors through the space to give them a lasting, positive impression of our college, and a chance to enjoy some of the new amenities."

One such amenity, the Global Café, is a particular draw for students offering snacks, deli-style entrees, beverages and coffee. The coffee, a fair-trade Ugandan variety, showcases the relationship between Uganda and the college's Center for Sustainable Rural Livelihoods. Fifty percent of sales from each cup support college programs supporting Ugandan children and families. According to ISU Dining, the Global Café sells nearly 400 cups of the brew per week.

"The Harl Commons is the new front door to the college," says Acker. "One we're extremely proud of." ■



The Harl Commons' Global Café draws students in with fresh Ugandan, fair-trade coffee, other beverages, snacks and meals. Fifty percent of sales from each cup support Ugandan children and families through the Center for Sustainable Rural Livelihoods.

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Look for an email survey to arrive from the ISU College of Agriculture and Life Sciences on January 13. We want to know how you'd like to hear from us and what you thought about your student experience. It should only take 10 minutes to complete.

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